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 Laminate, provides optical orientation
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Patent Family (17 patents, 82 countries)

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 199866455 A 19980113; US 1999419947 A 19991018

Alerting Abstract WO A1

NOVELTY - Optical film is formed by processing a film (111) having two materials (113, 115) with respect to first and second in-plane axes (X, Y) of the film under conditions which induce optical orientation in the first material which differ substantially in the two directions such that the refractive index of the second material matches the refractive index of the first material along one of the two axes.

DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

1. an optical film comprising two co-extruded materials one of which has an orientation along each of first and second in-plane axes, and the

other having orientation along only the first in-plane axis, such that the refractive index (RI) of the two materials along one of the two axes is the same and the absolute value of the difference between the two materials along the other axis divided by the average RI index of the two materials is greater than 0.06;

2. making an optical film comprising applying to a film of a first material optically interfaced with a second material having a different visco-elasticity characteristic, a draw in a first direction to induce optical orientation of the second material, and processing the film to produce optical orientation of both materials in a second direction;
3. making a polarising film using a multilayer film having two optically interfaced layers of birefringent material which have different isotropic RI's, drawing the film in one in-plane axis such that the RI of the first layer along the two in-plane axes, and a third axis orthogonal to the in-plane axes, and the RI of the second layer along the second in-plane axis are unchanged, while the RI of the second layer along the first in-plane axis is changed to be equal the RI of the first layer along the same axis, and drawing the multilayer film in the direction of the second in-plane axis such that the RI of the two layers along the third axis are equal; and
4. an optical polarising film comprising a blend of a disperse phase of a first polymeric material optically interfaced with a continuous phase of a second polymeric material, the second material having a molecular orientation which is strong along a first axis and weak along a second axis of the film, and the two films having RI's along one of the axes matched so as to transmit light of a first polarisation with RI's along the other axis so different as to reflect light of a second polarisation.

USE - Used in optical films, particularly polarising films.

ADVANTAGE - Provides improved optical performance increased resistance to fracture or tear, enhanced dimensional stability etc.

DESCRIPTION OF DRAWINGS - The figure shows the optical film.

111 film laminate

113, 115 first and second material

X, Y first and second in-plane axes

Z thickness direction axis